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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,727	07/30/2004	Masuhiko Natsuhara	039.0047	4726
29453 7590 05/18/2007 JUDGE & MURAKAMI IP ASSOCIATES DOJIMIA BUILDING, 7TH FLOOR 6-8 NISHITEMMA 2-CHOME, KITA-KU OSAKA-SHI, 530-0047 JAPAN			EXAMINER CHANDRA, SATISH	
			ART UNIT 1763	PAPER NUMBER
			MAIL DATE 05/18/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/710,727

**Applicant(s)**

NATSUHARA ET AL.

**Examiner**

Satish Chandra

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 - 8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1, 2, 5 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Ushigoe et al (JP 05-009740).**

Ushigoe et al discloses:

**Regarding claim 1,**

A ceramic heater block 1 (Fig 1) comprising a conductive heater (electro conductive element) 4; and two rod-like electrodes 8A and 8B for supplying electricity to the heating elements 4 through terminals 5A and 5B wherein electrodes are connected to outside the processing chamber through lead wire 9.

**Regarding claim 2,** electrodes 8A and 8B (Figs 1, 2) are enclosed in a tubular pieces 11A and 11B (cylindrical object).

**Regarding claims 5 and 6,** a semiconductor wafer-heating device comprising a susceptor 2 (wafer heating surface, Fig 8) located in a processing chamber.

**Claims 1, 2, 5 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Pollock et al (US 6,082,297).**

Pollock et al discloses:

**Regarding claim 1,**

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A ceramic heater block 75 (Fig 4) comprising a conductive heater (electro conductive element) 76; and two electrodes 79 for supplying electricity to the heating elements 76 through terminals wherein electrodes are connected to outside the processing chamber through a cable 80 and end connector 81.

**Regarding claim 2**, electrodes 79 (Fig 4) are enclosed in a tubular pieces 80 (cylindrical object).

**Regarding claims 5 and 6**, a semiconductor wafer-heating device comprising a susceptor 74 (wafer heating surface, Fig 4) located in a processing chamber.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 3, 4, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ushigoe et al (JP 05-009740) in view of Pollock et al (US 6,082,297).**

Ushigoe et al was discussed above.

Ushigoe et al differs from the present invention in that Ushigoe et al does not teach introducing an inert gas into the interior of the tubular piece.

Pollock et al discloses:

**Regarding claim 3 and 4**, providing an inert gas (conductive gas such as helium) within the encasement (susceptor) 75 (Fig 4) wherein the heater (electro -

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conductive element)74 includes an inner resistive element 76 and the electrical lead-out wires (electrodes) 79 connected to the element 76 at one end and extend to the end connector 81 (Column 6, lines 34 –43). The inert gas is supplied to all the elements in the encasement 75 including electrodes.

**Regarding claims 7 and 8,** a susceptor 75 (Fig 4) is located in a processing chamber.

Therefore it would have been obvious to one of ordinary skill at the time of invention to provide an inert gas in the housing of Ushigoe et al as taught by Pollock et al.

The motivation is to prevent oxidation of the heating element and improve thermal conductance as taught by Pollock et al.

### ***Response to Arguments***

Applicant's arguments filed 4/30/2007 have been fully considered but they are not persuasive.

#### **Regarding Claim Rejections - 35 U.S.C. § 102**

Claims 1, 2, 5 and 6 have been rejected under 35 U.S.C. § 102 twice, once over Japanese Unexamined Pat. App. Pub. No. H05-009740 to Ushigoe et al. (assigned to NGK Insulators), and once over U.S. Pat. No. 6,082,297 to Pollock et al.

Applicants address these separate rejections below in turn.

In Ushigoe et al., as shown in Fig. 2 and as stated in paragraph [0015] of the reference, the electrode members are connected to respective "massive terminals" (as rendered in the machine translation--more precisely, clumplike or blob terminals). As against this, as described in paragraph [0004] of the present specification, when the joints are as in Ushigoe et al., the structure corrodes through the joined portions, on account of which electrodes as recited in claim 1 of the present application are made seamless in order to enhance the electrodes' durability, which thus differs clearly from the cited reference. With the structure of Ushigoe et al., the durability clearly degrades over that of the invention as recited in the present claims. In fact, Ushigoe et al. is structurally close to Comparative Example 1 (Fig. 7) in the present specification, and is therefore completely differs from the invention as recited in the present claims.

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The Pollock et al. embodiment cited in the Office action is not a ceramic susceptor but rather a metallic heater. And although Pollock et al. sets forth that wires are joined, the specific joining method is unclear. Moreover, it is believed that inasmuch as it would appear that the termini on the side in Fig. 4 without the heater are connected to something, Pollock et al. differs from an implementation as in the present invention, in which there are no joints.

**Regarding Ushigoe et al**, the Examiner disagrees because the argument is moot because the argued subject matter is not a part of the claim. Applicant argues 'seamless in order to enhance the electrode durability' but the claimed language does not support this statement.

**Regarding Pollock et al**, the Examiner disagrees because the heater 74 includes an outer encasement 75, an inner resistive element 76 surrounding electrical insulators 77a and 77b (e.g. mica sheets) and a conductive gas 78 within the encasement 75. Electrical lead out wires 79 connect to the element 76 (Column 6, lines 34 – 42).

**Pollock et al teaches** a heater block (an inner resistive element 76 surrounding electrical insulators 77a and 77b (mica sheets)) which is ceramic. Also the joining method is not claimed

### **Conclusion**

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.



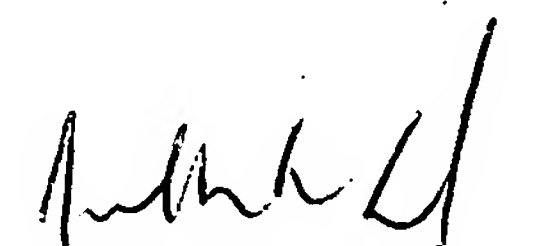
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Satish Chandra whose telephone number is 571-272-3769. The examiner can normally be reached on 8 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, primary examiner Jeffrie R. Lund can be reached on 571-272-1437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Satish Chandra

  
Jeffrie R. Lund  
Primary Examiner

SC  
5/11/2007